

WHAT IS CLAIMED IS:

1. A method for managing registration requests from a plurality of devices, the method comprising the following steps performed at a controller:

- 5 receiving a token request from a device;  
determining a registration load on the controller;  
granting a token to the device in response to the registration load;  
receiving a token registration request from the  
10 device; and  
storing the token registration request in a registration queue upon determining that the device has been granted the token.

- 15 2. The method of Claim 1, wherein:  
the controller comprises a call manager operable to maintain a registration table that stores an address mapping for the device upon registration; and  
the device comprises a packet-based telephony device  
20 managed by the call manager.

3. The method of Claim 1, further comprising:  
receiving an initial registration request from a second device; and  
25 storing the initial registration request in the registration queue at a lower priority than the token registration request.

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4. The method of Claim 1, further comprising:  
receiving a priority device registration request  
from a second device; and  
storing the priority device registration request in  
5 the registration queue at a higher priority than the  
token registration request.

10 5. The method of Claim 1, wherein the device  
comprises a first packet-based telephony device, and  
further comprising:

receiving an initial registration request from a  
second packet-based telephony device;

15 storing the initial registration request in the  
registration queue at a lower priority than the token  
registration request;

receiving a priority device registration request  
from a telephony gateway device; and

20 storing the priority device registration request in  
the registration queue at a higher priority than the  
token registration request.

25 6. The method of Claim 1, further comprising  
processing registration requests stored on the  
registration queue in priority order and at a rate  
determined by the processing resources of the controller.

7. The method of Claim 1, further comprising:  
receiving a token request from a second device;  
determining the registration load;  
denying the token request; and

5 communicating to the second device a response having  
a retry time that indicates when the second device should  
communicate another token request.

8. The method of Claim 1, wherein the registration  
10 load comprises at least one of the following:  
a processor load of the controller; and  
a number of registration requests stored in the  
registration queue.

15 9. The method of Claim 1, wherein:  
the token granted to the device includes a timeout;  
and

storing the token registration request on the  
registration queue further comprises storing the token  
20 registration request on the registration queue if the  
controller receives the token registration request prior  
to expiration of the timeout.

10. A method for managing registration requests from a plurality of telephony devices managed by a call manager, the method comprising the following steps performed at the call manager:

5       receiving a token request from a first packet-based telephony device;

          determining a registration load on the call manager;

          granting a token to the first packet-based telephony device in response to the registration load;

10       receiving a token registration request from the first packet-based telephony device;

          storing the token registration request on a registration queue upon determining that the device has been granted the token;

15       receiving an initial registration request from a second packet-based telephony device;

          storing the initial registration request on the registration queue at a lower priority than the token registration request;

20       receiving a priority device registration request from a telephony gateway device;

          storing the priority device registration request on the registration queue at a higher priority than the token registration request; and

25       processing registration requests stored on the registration queue in priority order and at a rate determined by the processing resources of the call manager.

11. The method of Claim 10, further comprising:  
receiving a second token request from a third  
packet-based telephony device;  
determining the registration load;  
5 denying the second token request; and  
communicating to the third packet-based telephony  
device a response having a retry time that indicates when  
the third packet-based telephony device should  
communicate another token request.

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12. The method of Claim 10, wherein the  
registration load comprises at least one of the  
following:

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a processor load of the controller; and  
a number of registration requests stored on the  
registration queue.

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13. The method of Claim 10, wherein:  
the token granted to the first packet-based  
telephony device includes a timeout; and

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storing the token registration request on the  
registration queue further comprises storing the token  
registration request on the registration queue if the  
controller receives the token registration request prior  
to expiration of the timeout.

14. An apparatus for managing registration requests from a plurality of devices, the apparatus comprising:

an interface operable to receive a token request from a device, the interface further operable to receive  
5 a token registration request from the device;

a processor operable to determine a registration load on the controller, the processor further operable to grant a token to the device in response to the registration load; and

10 a registration queue operable to store the token registration request upon determining that the device has been granted the token.

15. The apparatus of Claim 14, wherein:

15 the apparatus comprises a call manager operable to maintain a registration table that stores an address mapping for the device upon registration; and

the device comprises a packet-based telephony device managed by the call manager.

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16. The apparatus of Claim 14, wherein:

the interface receives an initial registration request from a second device; and

25 the registration queue stores the initial registration request at a lower priority than the token registration request.

17. The apparatus of Claim 14, wherein:

the interface receives a priority device registration request from a second device; and

the registration queue stores the priority device registration at a higher priority than the token registration request.

18. The apparatus of Claim 14, wherein:

the device comprises a first packet-based telephony device;

the interface receives an initial registration request from a second packet-based telephony device and a priority device registration request from a telephony gateway device; and

the registration queue stores the initial registration request at a lower priority than the token registration request and the priority device registration request at a higher priority than the token registration request.

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19. The apparatus of Claim 14, wherein the controller processes registration requests stored on the registration queue in priority order and at a rate determined by the processing resources of the controller.

20. The apparatus of Claim 14, wherein the registration load comprises at least one of the following:

- a processor load of the controller; and
- 5 a number of registration requests stored on the registration queue.

21. The apparatus of Claim 14, wherein:

- the token granted to the device includes a timeout;
- 10 and

the registration queue stores the token registration request if the controller receives the token registration request prior to expiration of the timeout.



22. A method for registering with a controller, the method comprising the following steps performed at a device:

communicating a token request to a controller;  
5 receiving a token from the controller;  
communicating a token registration request to the controller, the token registration request indicating that the device has received the token from the controller; and  
10 receiving a registration acknowledgment from the controller.

23. The method of Claim 22, further comprising the following steps performed prior to communicating a token  
15 request:

determining that the controller is unavailable;  
registering with a secondary controller in response to determining that the controller is unavailable; and  
determining, while registered with the secondary  
20 controller, that the controller has become available.

24. The method of Claim 22, wherein:  
the controller comprises a call manager operable to maintain a registration table that stores an address  
25 mapping for the device upon registration; and  
the device comprises a packet-based telephony device managed by the call manager.

25. The method of Claim 22, further comprising the following steps performed prior to communicating a token request:

- configuring the device;
- 5 communicating an initial registration request to the controller;
- registering with the controller in response to the initial registration request;
- determining that the controller is unavailable;
- 10 registering with a secondary controller in response to determining that the controller is unavailable; and
- determining, while registered with the secondary controller, that the controller has become available.

- 15 26. The method of Claim 22, wherein configuring the device comprises:
  - detecting a network connection;
  - requesting a device address;
  - receiving the device address;
  - 20 requesting configuration information;
  - receiving configuration information; and
  - configuring the device.

27. The method of Claim 22, wherein:

the device comprises a packet-based telephony device; and

5 configuring the packet-based telephony device comprises:

detecting a network connection;

broadcasting a request to receive a device address;

10 receiving the device address from a dynamic host configuration protocol (DHCP) server;

requesting configuration information using a resource address;

receiving configuration information comprising line assignments; and

15 configuring the device using the line assignments.

28. The method of Claim 22, wherein determining, while registered with the secondary controller, that the controller has become available comprises:

periodically and repeatedly communicating a message to the controller; and

determining that the controller has become available if the controller acknowledges the message.

29. The method of Claim 22, wherein communicating a token request, comprises:

communicating a prior token request;  
receiving a response denying the prior token  
5 request, the response having a retry time; and  
communicating a token request after expiration of the retry time.

30. The method of Claim 22, wherein:  
10 the token granted to the device includes a timeout;  
and

receiving a registration acknowledgment from the controller occurs if the controller receives the token registration request prior to expiration of the timeout.

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31. Logic for managing registration requests from a plurality of devices, the logic encoded in a medium and operable when executed by a controller to:

- 5       receive a token request from a device;  
          determine a registration load on the controller;  
          grant a token to the device in response to the registration load;
- 10       receive a token registration request from the device; and  
          store the token registration request in a registration queue upon determining that the device has been granted the token.

32. A controller for managing registration requests from a plurality of devices, the controller comprising:

means for receiving a token request from a device;

5 means for determining a registration load on the controller;

means for granting a token to the device in response to the registration load;

means for receiving a token registration request from the device; and

10 means for storing the token registration request in a registration queue upon determining that the device has been granted the token.